Personal Guarantees on Bank Loans and SMEs' CEO Succession

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Preliminary

Abstract

Using loan- and firm-level data from a government financial institution for small and medium enterprises (SMEs) in Japan, this paper examines the relationship between personal guarantee agreements on bank loans by SMEs' managers and their CEO succession. Looking at the period after the 2014 Guidelines for Personal Guarantees Provided by Business Owners, which asks banks not to impose personal guarantees on loans to SMEs, we find that receiving loans without personal guarantees increases SMEs' CEO succession. Combined with SMEs' ownership data, we also find that the response is moderated for owner-managed firms. Our results also suggest that the connection between personal guarantees and CEO succession is weaker for firms in industries in which family succession is more common. We conducted a survey and found that the causality between borrowing without personal guarantees and succession runs in both directions. Some firms took out loans without personal guarantees for the purpose of facilitating CEO succession, while others found that their CEO succession was made easier by receiving loans without personal guarantees.

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1. Introduction

Recent studies have confirmed the importance of CEO succession strategy for firm performance (Lee et al. 2003, Pérez-González 2006, Cucculelli and Micucci 2008, Mehrotra et al. 2013). Moreover, CEO succession influences the age of CEOs, which is often identified as an important driver of firm growth (Cannella et al. 2009, Serfling 2014 , Belenzon et al. 2019). Although the literature has shown that several factors can influence corporate succession, such as CEOs' family structure (Bennedsen et al. (2007)) and legal protection for stakeholders (La Porta et al., 1999, Claessens et al., 2000), little is known about the relationship between corporate financial contracts and CEO succession.

In parallel, the corporate finance literature has documented that a firm's financial contracting affects various corporate strategies, such as investment decisions (Nini et al. 2009, Nini et al. 2012, Roberts and Sufi 2009), operational flexibility (Benmelech et al. 2020), and innovative activities (Chava et al. 2017, Hochberg et al. 2018, Mann 2018, Ma et al. 2022). This paper bridges the two areas of literature by examining the relationship between a firm's financing contracts and CEO succession.[1] Specifically, we look at a particular property of a corporate loan contract that is prevalent among SMEs in Japan, namely personal guarantees by SME managers.

We focus on Japan to examine the relationship between personal guarantees and CEO succession for two reasons. First, Japan has been experiencing the fastest population aging among G20 countries (Rouzet et al. 2019), with the growing importance of CEO aging on the economy. The average age of CEOs in Japanese companies increased from 54.0 years in 1990 to

[1]There are only a few papers documenting the relationship between firms' financing strategy and CEO succession. One of these was Wasserman (2003), which found that the need for a new round of financing can be a force behind succession.

60.1 years in 2020.[2] Given the negative correlation between firm growth and CEO age identified in the literature (e.g., Belenzon et al. 2019), encouraging the succession to younger CEOs is one of Japan's urgent needs (Japan Industry Review 2017). Second, a Japanese policy reform in 2014, which will be explained in detail later, led to a drastic decrease in the use of personal guarantees by the Japanese banking industry. The policy reform allows us to compare firms that borrowed with and without personal guarantees and how they differ in their CEO succession likelihood.

A personal guarantee in a loan contract requires an individual to personally repay the loan if the company is unable to do so. A personal guarantee increases the cost of default for the borrower and mitigates moral hazard, as collateral would do. For small and medium enterprises (SMEs) that do not have many physical assets that could serve as collateral, a personal guarantees provide an effective mechanism to limit moral hazard (Thakor and Udell 1991, Bester 1994). In many countries, financial institutions heavily use personal guarantees for SME lendings. For example, in 2014, more than 80% of newly issued loans to SMEs by Japanese banks were issued with personal guarantees.[3]

Although a personal guarantee may facilitate lending by mitigating moral hazard, it could also impose huge burdens on CEOs and their families. When a business gets into trouble, a personal guarantee can cause personal tragedy (e.g., losing houses and cars), as the majority of such guarantees exceed the total amount of CEOs' personal assets.[4] Moreover, when the CEO of a company changes, it was customary in Japan for a financial institution to require

[2]The numbers come from the Teikoku Data Bank. See https://www.tdb.co.jp/report/watching/press/p210202.html for more detail.

[3]See https://www.fsa.go.jp/policy/hoshou_jirei/index.html for the numbers.

[4]According to a survey of SME personal guarantee practices in 2013, more than 68% of personal guarantees exceeded the amount that could be repaid with CEOs' personal assets, including financial assets and real estate. The survey report (in Japanese) is available here https://dl.ndl.go.jp/info:ndljp/pid/11252876.

personal guarantees from the new CEO, which may discourage a new CEO from taking over the business for fear of the downside financial risk.[5]

To address the concerns about the dark side of personal guarantees, the Japan Bankers Association and Japan Chamber of Commerce developed the Guidelines for Personal Guarantees Provided by Business Owners in December 2013.[6] The guidelines ask SMEs to properly separate business assets from personal ones and banks not to require personal guarantees to the SMEs that follow the guidelines. The guidelines became effective on February 1, 2014.

Since the guidelines were implemented, the reliance on personal guarantees for SME loans has declined. From March 2014 to March 2021, the proportion of newly issued loans that do not require personal guarantees increased from 19% to 45% at government-owned financial institutions and from 12% to 30% at private-sector commercial banks.[7] Using data from the period when the practice of requiring CEOs to provide personal guarantees started to decline, we examine whether firms that took loans without personal guarantees by CEOs have a higher CEO succession rate than those that borrowed with personal guarantees after the implementation of the guidelines.

Our empirical analysis shows that receiving a loan without a personal guarantee is associated with a higher rate of CEO succession. In addition, several factors are found to weaken this relationship. For example, the im-

[5]Many surveys have found the negative impact of personal guarantees on CEO succession in Japan. According to the Survey of SME Support, JAPAN, of the appointed successor CEOs who refused to take over businesses, 59.8% answered that they did so purely because of personal guarantee responsibilities for previously issued loans (https://www.chusho.meti.go.jp/kinyu/hosyoukaijo/2020/200204kaijo02.pdf). Furthermore, the Survey of SME Business Succession in 2009 showed that the personal guarantee requirements for new CEOs were amoung the main obstacles of SME CEO succession. See https://www.jfc.go.jp/n/findings/pdf/sme_findings091216.pdf for more detail on the survey.

[6]The guidelines (only in Japanese) can be accessed from the FSA website (https://www.fsa.go.jp/news/25/ginkou/20131209-1.html).

[7]See https://www.chusho.meti.go.jp/kinyu/keieihosyou/.

pact of having loans without personal guarantees is weaker for firms in industries in which family succession is more common. We also find that owner-managed firms' succession does not depend as much on whether their loans come with personal guarantees. Succession in owner-managed firms involves more factors than that in non-owner-managed firms, and these factors include inheritance tax and the CEO's emotional attachment to the firm, which may weaken the effect of personal guarantees on succession.

The primary dataset we analyze contains proprietary information from the SME Unit of the Japan Finance Corporation (JFC), a government-owned financial institution specializing in policy-based lending to SMEs. We analyze loan- and firm-level information on SMEs that received new financing from the SME Unit of the JFC between February 2014 to March 2016. The anonymized loan-level data contain information for each loan, including whether they were issued with a personal guarantee. The firm-level data include firms' accounting information, industry classification, and manager's attributes, such as their birthdays and shareholdings. The data are anonymized, but the loan-level data can be combined with firm-level data by firm IDs unique to each firm. Additionally, we use business succession data for SMEs collected by Tokyo Shoko Research (TSR) to construct an industry-level share of family succession.

An interesting but potentially concerning aspect of our analysis is the extent to which the firms' selection can explain our result. Firms that want to replace their CEOs might be more likely to take out loans without personal guarantees. To address this point, we took two steps. First, we excluded from our sample firms that borrowed specifically for the purpose of their CEO succession. The JFC offers various loan programs depending on the borrowing purpose, and some target SMEs that need financing for their CEO succession plan. We removed a part of the selection bias by excluding SMEs that borrowed from the loan program for CEO succession from our sample.

However, some selection bias remains in the estimation if firms that want to replace their CEOs are more likely to borrow without personal guarantees and for non-succession purposes. Therefore, second, we surveyed Japanese SMEs and directly asked whether the selection had taken place. The survey showed that 40% of the surveyed firms that borrowed without personal guarantees and experienced CEO succession during our sample period chose to borrow without personal guarantees primarily for succession purposes. The findings indicate that selection exists but is not the only driver of our results.

Our paper makes three main contributions. First, and most importantly, we document that a firm's loan contract specification is related to its succession decision. We find that taking out loans without a personal guarantee increases the probability of CEO succession in the subsequent five years by about 2.9%. Given that the share of firms that experienced CEO succession during our sample period (April 2016 to March 2020) was approximately 13.7%, 2.9% is substantial.

Second, we explore factors that weaken the relationship between personal guarantees and succession. We find that the presence of personal guarantees is a less important determinant of CEO succession for firms in industries in which family succession is more common. We also find that the increase in propensity to have CEO succession after receiving a loan without a personal guarantee is smaller for owner-managed firms. These findings have important implications on corporate strategy because firm performance after succession is likely to depend on its ownership structure (Huson et al. 2004, Kato and Long 2006) or whether it experienced family succession (Pérez-González 2006).

Finally, we reduce the firm selection by using detailed loan program information and surveying SMEs. Endogenous selection bias is a major issue when identifying causal relationships between financial and corporate strategy (Parsons and Titman 2008) because firms make joint decisions on their

financial structure and corporate strategy. In this paper, we not only isolate firm selection using the detailed loan program information but also quantify the fraction of the results that selection can explain. Quantifying selection is particularly valuable in our context because firm selection would further facilitate CEO succession by benefiting from the removal of personal guarantees.

The remainder of the paper is organized as follows. Section 2 discusses the theoretical background and outlines our empirical hypotheses. Section 3 explains the Japanese policy reform of 2014 which we exploit in our empirical strategy. Section 4 describes our data and discusses our estimation procedures. Section 5 presents our empirical results. Section 6 shows our survey method and results. Section 7 concludes our study.

2. Theoretical Background

CEO changes are critical turning points for companies due to the importance of CEOs in firms' strategies (Adner and Helfat 2003, Hambrick 2007, Hambrick and Mason 1984). Thus, it is crucial to understand what factors affect CEO successions as well as how CEO successions affect firm performance (see Berns and Klarner 2017 for extensive surveys of the literature). Prior research has emphasized the effect of CEO succession on firms' financial policies (Amore et al. 2011, Dittmar and Duchin 2016 , Osborn et al. 1981). However, the effect of firms' financial arrangements on CEO succession has so far largely escaped researchers' attention (Wasserman 2003). This section discusses how personal guarantee agreements in firms' loan contracts may negatively affect firms' CEO succession likelihood. We also discuss possible factors that may moderate or exacerbate this relationship.

When CEO succession occurs in a Japanese SME, a financial institution often requires the new CEO to provide a personal guarantee for existing loans.

Moreover, the outgoing CEO can also be required to carry some personal guarantee responsibility on the same loans. According to an FSA survey in 2016 of Japanese companies that had recently experienced CEO succession, 28% of the new CEOs had been asked to inherit personal guarantees. Another 46% of the new CEOs had been asked to provide personal guarantees in addition to the guarantees made by previous CEOs.[8] In either case, the new CEOs were personally responsible for repaying the loans given to the previous CEOs.

Personal guarantee responsibilities for successor CEOs can discourage CEO succession in several ways. First, personal guarantees can impose significant downside financial risk on new CEOs. Even if the CEO owns a substantial portion of the business, the liability is limited to the ownership. Offering personal guarantees, however, can put their personal assets at risk in case loan default. Furthermore, when the guaranteed amount exceeds the CEO's personal assets, the CEO may be forced to file for personal bankruptcy. According to a TSR survey, among the 5552 firms that went bankrupt in Japan in 2020, 3789 CEOs (68.2%) personally went bankrupt due to their personal guarantee responsibilities.[9] The significant downside risk may discourage potential successors from taking over businesses.

Second, the downside financial risk of personal guarantees can cause the CEOs' mental health to deteriorate. Personal guarantee responsibilities are reportedly associated with mental health issues for responsible CEOs (Kamei et al. 2011) as well as suicide among those bankrupted after business failure (Tohoku Federation of Bar Associates 2012). Since having good mental health is of the utmost importance to adequately manage a business (Hessels et al. 2018), the anticipated stress from personal guarantees for po-

[8]The numbers are from https://www.sangiin.go.jp/japanese/annai/chousa/keizai_prism/backnumber/r02pdf/202018501.pdf.

[9]See https://www.tsr-net.co.jp/news/analysis/20210816_01.html for more detail.

tential successors may discourage not only the successors but also companies from replacing their CEOs.

Finally, the downside financial risk may limit successor CEOs' proactive strategic decisions, decreasing companies' incentive for CEO succession. One of the main benefits of CEO succession in terms of firm performance is that fresh perspectives are brought to the companies (Karaevli and Zajac 2013, Quigley and Hambrick 2012). However, with personal guarantees, successor CEOs may avoid making profitable yet risky strategic choices for fear of business failure and of the personal hardship that would follow. Extensive research has suggested that CEOs' personal costs under corporate bankruptcy motivate them to hedge against bankruptcy risk at the expense of firm growth and shareholder value (Eckbo et al. 2016, Bates et al. 2009, Strebulaev and Yang 2013, Eckbo and Thorburn 2003, Eisdorfer 2008).

These considerations can lead to lower CEO succession incentives for both successor CEOs and their companies when loans are issued with personal guarantee agreements before their succession. Given that our primary focus is on the guidelines that promote business loans without personal guarantees in Japan, we propose the following hypothesis:

Hypothesis 1 *Receiving a bank loan without a personal guarantee is associated with a higher likelihood of subsequent CEO succession.*

Several factors can influence the strength of the relationship between personal guarantees and firms' succession. We examine ownership structure and industry characteristics.

CEO ownership The ownership structure of firms may affect the strength of the relationship between personal guarantees and CEO succession. Specifically, we focus on CEO ownership.

Owner-managed firms are prevalent in Japan. According to a survey by

the Small and Medium Enterprise Agency in 2017, CEOs are the largest company shareholders in 72% of SMEs in Japan, of which 30% do not have external shareholders.[10]

We expect owner-managed firms to differ from other firms in several ways, which may affect the firms' succession decisions.[11] First, owner-CEOs have more control over corporate decisions due to their large shareholdings (Denis and Denis 1994). Extensive research has documented that owner-managed firms have different corporate performance and strategy compared with non-owner-managed firms (Chaganti and Damanpour 1991, Brush et al. 2000, Werner et al. 2005)), and some studies suggest that the concentration of power with the owner-manager ends up harming corporate value (Wasserman 2006, Durand and Vargas 2003, Bena and Xu 2017, Fitza and Tihanyi 2017). Concern over the concentration of power may dominate when choosing successors in owner-managed firms, so whether the loans are personally guaranteed or not becomes less important.

Second, CEOs in owner-managed companies are often highly attached to their firms. The majority of owner-managers are founder-managers (Denis and Denis 1994), who tend to have more emotional attachment to their firms. They use language that describes the firm as their "family" or "children" (Dobrev and Barnett 2005, Nelson 2003). Similarly, founder managers' identities are often strongly tied to their firms (Powell and Baker 2014). Their strong attachment to their companies might lead to them having a greater desire to remain at their companies longer (Fattoum-Guedri et al. 2018), or they may be determined to choose their children or other family members as their successors. Either way, in this case, we expect whether loans are

[10] See https://www.chusho.meti.go.jp/pamflet/hakusyo/H30/h30/html/b1_4_2_2.html for the survey (available only in Japanese).

[11] Lee et al. (2020) show that succession among founder managers, the majority of whom are owner-managers, is systematically different from other successions due to these CEOs' organizational identification with their firms.

personally guaranteed to become a less important determinant of business successions.

Finally, CEO succession in an owner-managed firm will involve the transfer or sales of company shares. In such a case, legal considerations such as inheritance and estate tax payments become important (Bennedsen et al. 2015, Tsoutsoura 2015). This may make personal guarantees a less important factor for succession decisions.

All these differences seem to make the problems regarding personal guarantees less relevant for CEO succession at owner-managed firms. Thus, we hypothesize the following:

Hypothesis 2 *The association between the absence of personal guarantees in loan contracts and CEO succession is weaker in owner-managed firms.*

Prevalence of family succession in the industry Succession practices differ across industries. For example, family succession is more common in the real estate, manufacturing, and restaurant industries, while recruiting CEOs from outside companies is more common in information and communication industries in Japan (Organization for Small and Medium Enterprises and Regional Innovation 2011). These differences in succession practices may affect the relationship between personal guarantees and CEO succession.

On the one hand, personal guarantees may discourage family succession more than non-family succession. Several studies have found that one of the main obstacles to succession is the successor's lack of motivation (Cespedes and Galford 2004). This is especially true for family successions because the incumbent CEOs care about their family members' welfare and will not appoint them as new CEOs if they are not motivated. Thus, if future financial burdens due to personal guarantees demotivate a potential successor from taking over the business, personal guarantees may inhibit family succession

more than non-family succession. This leads to the following hypothesis:

Hypothesis 3a *The effect of taking out loans without personal guarantees on CEO succession is stronger for firms in industries in which family succession is more common.*

On the other hand, it is often the case that family succession planning begins a long time before the actual succession occurs, and thus, a short-term financial decision such as taking out a loan with personal guarantees may not affect succession decisions as much. The most well-known example of this is the tradition of first-son successions, which refers to a CEO appointing his/her first-born son to be the next CEO (Bennedsen et al. 2007). First-son successions are still common in Japan (Kodama et al. 2021). According to a JFC 2020 survey, approximately 57% of SME family successions were first-son successions compared with 10% of family successions being first-daughter successions.[12] The prevalence of first-son succession implies that succession plans are likely to be predetermined (e.g., when a departing CEO's first child is born) and less likely to be affected by the existence of personal guarantees in case of family succession.

Moreover, similar to owner-managed firms, family succession involves more constraints than non-family succession, such as family succession tax (Tsoutsoura 2015) and legal constraints to bequeathing minimal stakes to non-controlling heirs (Burkart et al. 2003, Ellul et al. 2010). These constraints may make personal guarantees a less important consideration for succession decisions. We therefore propose a hypothesis that contrasts with Hypothesis 3a, as follows:

Hypothesis 3b *The effect of taking out loans without personal guarantees on CEO succession is weaker for firms in industries in which family succession is*

[12]See https://www.jfc.go.jp/n/findings/pdf/sme_findings200124.pdf for the survey (available only in Japanese).

more common.

3. The 2014 Guidelines for Personal Guarantee Provided by Business Owners

In the last couple of decades, the Japanese government has been trying to address concerns over the dark side of personal guarantees. For example, the Civil Code amendment of 2004 (effective April 1, 2005) required all guarantee contracts to be explicitly in writing and with terms of no longer than five years. In 2006, the government prohibited government financial institutions from requiring personal guarantees by a third party (such as friends and/or family of the business owner). The Financial Services Agency (FSA) also asked private sector financial institutions to stop seeking personal guarantees from third parties.

The government's attack on the practice of Japanese banks to require personal guarantees from business borrowers was intensified under the Abe administration (2012–2020). The administration viewed the practice as a major impediment to business risk-taking in Japan and a source of long-lasting stagnation in the Japanese economy. Reducing the use of personal guarantees became an important policy goal of the Abenomics economic reforms. With encouragement/pressure from the FSA and the Small and Medium Enterprises Agency of the Ministry of Economy, Trade, and Industry (METI), the Japan Bankers Association and Japan Chamber of Commerce developed the Guidelines for Personal Guarantee Provided by Business Owners in December 2013.[13] The guidelines ask SMEs to separate business assets from personal assets and strongly recommend banks not to require personal guar-

[13]The guideline (only in Japanese) can be accessed from the FSA website: https://www.fsa.go.jp/news/25/ginkou/20131209-1.html.

antees from SMEs that follow the guidelines. The guidelines also specify the procedures for renegotiating or removing the existing guarantees.[14] The guidelines became effective on February 1, 2014. Special rules have supplemented the original guideline at the time of business succession (December 2019) and those for SMEs that are going out of business (March 2022).[15]

Although the guidelines were just guiding principles and not mandatory for banks, they had an impact. The share of newly issued loans without personal guarantees has increased for most Japanese financial institutions; government-funded banks increased the percentage of newly issued loans without personal guarantees from 15% to 45%, and private banks did so the proportion from 12% in FY 2014 to 30% in the fiscal year of 2021.

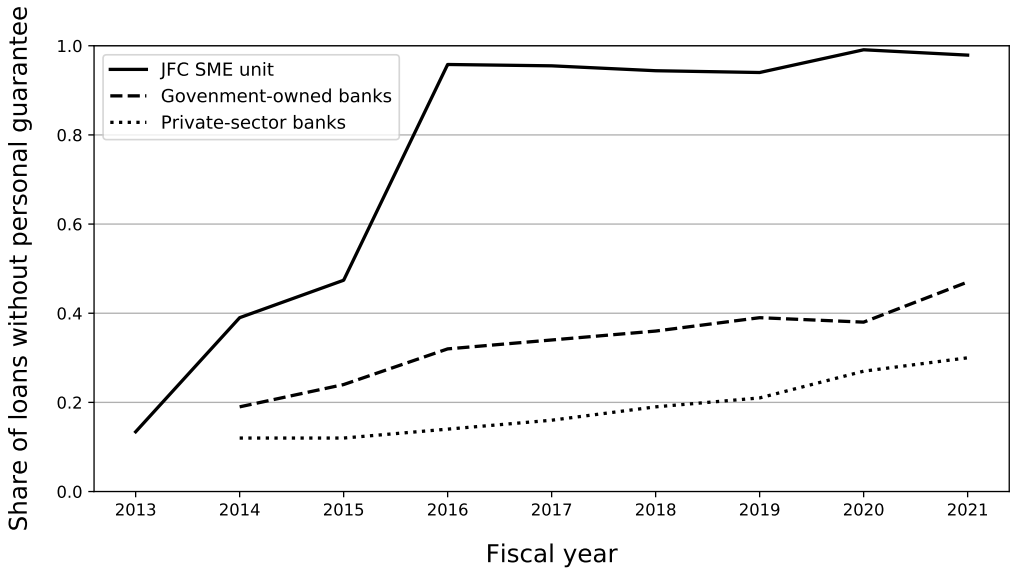
Figure 1 shows how the proportion of new loans without personal guarantees increased at private banks and government financial institutions. For both types of institution, the proportion of new loans without personal guarantees gradually increased after the introduction of the guidelines. By fiscal year 2019, which was the last fiscal year before the COVID-19 pandemic began, about 40% of the new loans made by government financial institutions and about 20% of the new loans issued by private-sector bank were without personal guarantees.

The change was more dramatic for the SME Unit of the JFC, which is also shown in Figure 1. In the fiscal year 2013, which included only two months after the implementation of the guidelines, the proportion of newly issued loans without personal guarantees by the SMC Unit was already as high as

[14]Despite the specified procedures for *existing* personal guarantees, it had very little effect in practice. For example, the guidelines were used to dissolve personal guarantees in only 207 cases by private financial institutions and 61 cases by government-owned financial institutions in FY 2015. See https://www.fsa.go.jp/policy/hoshou_jirei/index.html for the information.

[15]These supplements can be found at https://www.fsa.go.jp/news/r1/ginkou/20191224-1.html and https://www.fsa.go.jp/news/r3/ginkou/20220304-2.html, respectively.

Figure 1: Loans without personal guarantees after the guideline implementation



Note: This graph contains the proportion of newly issued loans without personal guarantees in the SME Unit by the JFC, private-sector banks, and government-owned financial institutions in Japan. Fiscal years start in April and end in March. Numbers for private-sector and government-owned banks come from the Small and Medium Enterprise Agency (https://www.chusho.meti.go.jp/kinyu/keieihosyou). Numbers for the SME unit are from the JFC (https://www.jfc.go.jp/n/company/sme/pdf/2022jfs.pdf).

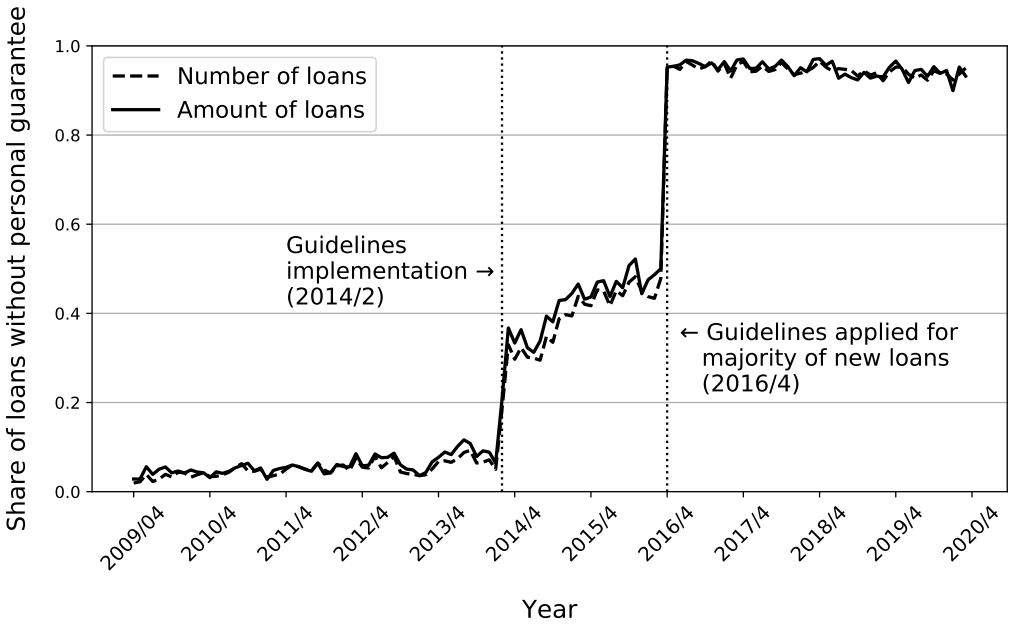
13.4%. The proportion jumped to 39.0% in the fiscal year 2014 and 47.4% in the fiscal year 2015. Since April 2016, the SME Unit stopped using personal guarantees almost entirely, and the proportion of new loans without personal guarantees increased further to approximately 95%.

The immediate response by the SME Unit of the JFC is clearer in Figure 2, which shows the monthly proportion of newly issued loans without personal guarantees. The share (in terms of the number and the amount of loans) jumped to more than 30% in February 2014 from less than 10% prior that month. Between February 2014 and March 2016, the SME Unit advanced approximately 40% of newly loans without personal guarantees, while the rest still carried personal guarantees.

During this period, all the companies that applied to the SME Unit for new loans were given the option of borrowing without personal guarantees, provided that they satisfied the conditions spelled out in the guidelines, such as a clear separation of company assets from the owner's personal assets and a timely disclosure of financial information and business conditions. The JFC also imposed an interest surcharge between 0.0% to 0.4% (depending on the internal credit ratings of the SMEs) on loans without personal guarantees. Facing the choice between a loan with a personal guarantee but without a surcharge and another without a personal guarantee but with a surcharge, some borrowers chose the ones without the personal guarantee while the others chose traditional loans with personal guarantees during this period.

After April 2016, the JFC dropped the surcharge on loans without personal guarantees. Following this change, almost all new loans did not carry personal guarantees, suggesting that those without personal guarantees had become the better choice for most companies. In Figure 2, we observe that more than 90% of loans issued after April 2016 by the SME Unit of the JFC were without personal guarantees.

Figure 2: JFC loans without personal guarantees



Note: "Number of loans" measures the monthly share of newly issued loans without personal guarantees. "Amount of loans" measures the monthly share of the total amount of newly issued loans without personal guarantees. Both numbers come from JFC the SME Unit's anonymized loan-level data.

Our analysis exploits the heterogeneity of firms between February 2014 and March 2016. Some SMEs borrowed with personal guarantees, and some others borrowed without. We compare those two groups and examine how personal guarantees in loan contracts affected the firms' CEO successions after April 2016. One potential issue is the endogeneity of the choice of loans with personal guarantees. To deal with the problem, we control for the interest rate without surcharge, using the JFC internal credit rating data, which mechanically determines surcharge. Furthermore, selection issues are dealt with by using loan program information and surveys (see Section §6).

4. Data and Estimation Strategy

4.1 Data

We use an anonymized version of proprietary data from the SME Unit of the JFC to analyze the relationship between personal guarantees on business loans and CEO succession.[16] The JFC SME Unit mainly issues long-term loans (more than seven years) for Japanese SMEs.[17,18] The dataset includes information on individual loans, accounting information on SME borrowers, and information on the executives of the SMEs. The loan-level data include firm identifier, loan amount, loan contract date, maturity, interest rate, borrowing purpose (loan program), and other loan attributes, such as

[16] One of us (Hoshi) is a member of Policy Evaluation Study Group at the SME Unit and was allowed to access anonymized data to examine several research questions posed by the study group, including the inquiries in this paper.

[17] The JFC consists of three units, the SME, national life, and agricultural and fishery units. The national life unit covers small loans (on average, 7 million yen ≈ 70,000 USD) for households and self-employed workers.

[18] The definition of SMEs depends on which industry the firm is in. For example, SMEs in the manufacturing industry are defined as companies with fewer than 300 employees or equity of fewer than 300 million yen (≈3 million USD). Please see https://www.jfc.go.jp/n/finance/search/pdf/chusho_chouki.pdf for more detail about the definition of SMEs at the JFC.

whether the loan comes with personal guarantees.

The firm-level accounting data include the firm's financial statement information. From the accounting data, we use employment, total debt, and total equity, to control for firms' employment and debt-equity ratio in our estimation.

The executive data include the firm identifier, an indicator for whether the executive is a representative director or not, whether the executive is the president, the executive's demographic information (birth date, gender), and the shareholdings held by each executive. The executive data do not identify the CEOs of the companies, so we define a company's CEO by following the procedure suggested by Kokubo and Aya (2019). First, if an executive is a representative director and also a president, the executive is considered the CEO. Second, if the executive is the only representative director of the company, the executive is considered to be the CEO even when (s)he is not the president.

We combine the loan and executive data through unique firm identifiers and analyze the relationship between personal guarantees on loans and the firms' CEO successions after April 2016. We use the accounting data to control for necessary factors in our estimation.

We restrict our sample to firms that borrowed from the JFC SME Unit between February 2014 and March 2016. We connect the loan-level data to executive data for fiscal years 2015 to 2020 to see whether firms that borrowed without personal guarantees before March 2016 had higher succession rates after April 2016.[19] Our sample includes $21,004$ Japanese firms that borrowed from the JFC SME Unit between February 2014 and March 2016 and has executive information in the database for every fiscal year from 2015 to 2020.

We remove firms that have borrowed from loan programs for CEO succession from our sample to deal with the selection bias. Firms that have a

[19] We detect CEO successions as the change in CEO birthdays in our exective data.

concrete plan for near-future CEO succession can apply for the loan programs. When firms receive financing under these programs, the firms can only use the loan amount for succession-related expenses. In our sample of firms that borrowed from the JFC SME Unit between February 2014 and March 2016, 108 firms did so with loan programs for CEO succession.

In addition to the main analysis, we examine two factors that might affect the relationship between personal guarantees and CEO succession, namely owner-managed firms and the difference in the prevalence of family succession by industry. To analyze owner-managed firms, we construct an index of owner management and CEO's shareholding using the JFC executive data.

To measure the prevalence of family succession in various industries, we use the TSR Business Successor Survey. In the survey, 140,000 randomly chosen firms that are registered for the TSR newsletter are asked whether they have concrete CEO succession plans. If a firm answers yes, it is asked if the planned successor is a family member, a non-family member, or a non-family member from outside the firm. We construct an index for the prevalence of family succession in each industry by calculating the proportion of firms with family succession plans among the firms with succession plans for each Japan Standard Industry Code (JSIC). Both the TSR and JFC data use the JSIC, so we can connect the family succession index of TSR to the JFC at the industry level, although we cannot connect firm-level data across the datasets.

Table 1 summarizes the basic statistics of key variables in our analysis for our sample. In March 2016, 32% of the firms in our sample had outstanding loans without personal guarantees. The average firm had 22 million JPY in assets, generated 19 million JPY in sales, and had 60 employees.[20] The average CEO's age was 57.3 years, and the average firm's age was 41.6 years. The

[20]As of September 2022, 1 USD $\approx$ 140 JPY, which means that the average firm in our sample had \$0.15 million in assets and generated \$0.13 million in sales.

Table 1: Summary statistics

	# of firms	Mean	SD	10th	50th	90th
Share of loans w/o PG	24677	0.323	0.395	0.000	0.000	1.000
Firm age	22451	41.6	19.7	13.0	44.0	66.0
CEO age	20993	57.3	11.3	42.0	58.0	72.0
Assets (ten thousand JPY)	23939	2206.8	3745.3	262.9	1126.6	4913.7
Sales (ten thousand JPY)	23939	1906.4	3267.4	183.1	927.9	4374.2
Employment	24656	59.9	107.4	4.0	32.0	136.0
Debt-to-equity ratio	23939	0.337	0.110	0.177	0.359	0.455
CEO shareholding	20993	0.380	0.318	0.000	0.330	0.900

Note: This table provides summary statistics for the main firm-level variables used in the econometric analysis. The unit of observation is the firm. *Share of loans without personal guarantees* is calculated as each firm's share of outstanding loans without personal guarantees in March 2016. *Firm age* is the number of years from the date of establishment. *Debt to equity ratio* is total loans from financial institutions over total equity. All the values are calculated at the point of March 2016.

average debt equity ratio was 33.7%. Finally, CEO shareholding was 38% on average for the sample firms.

Table 2 presents the number of firms, the average share of loans without personal guarantees in March 2016, and the share of firms that experienced CEO succession between March 2016 and March 2020 by industry. We aggregate the four-digit JSIC codes into 16 larger classifications for ease of presentation. Firms in our sample are drawn from a broad industry distribution. The top three industries in terms of the number of firms in the industry are manufacturing, wholesale and retail, and construction. The average portion of firms that experienced a change in CEO between March 2016 and March 2020 across all industries is 13.7%. The top three industries in terms of the highest CEO succession rates are finance and insurance (20%), scientific research (17.6%), and transport and postal services (17.5%).

The top three industries in terms of a higher share of loans without personal guarantees are information and communication (45.7%), mining (41.3%), and services (36.0%). The manufacturing industry, the largest in our sample, also has a relatively high share of loans without personal guarantees (35.4%). The average share of firms with all their JFC loans issued *with* personal guarantees as of March 2016 is 56.1%, while the average share of firms with all their JFC loans *without* personal guarantees is 15.9%.

4.2 Estimation Strategy

Our primary interest is in whether receiving loans without personal guarantees is associated with a higher CEO succession rate. We estimate the following regression model to examine the relationship:

$$\text{CEO_Change}_{f,i,r} = \alpha_1 \text{Share_NoPG}_{f,i,r} + \alpha_2 \text{Control}_{f,i,r} + \phi_i + \varphi_r + \epsilon_{f,i,r}, \quad (1)$$

where subscript f denotes a firm, i denotes a JSIC 4-digit industry, and r denotes a prefecture.[21] $\text{CEO_Change}_{f,i,r}$ is a dummy variable that equals one if firm f changed its CEO between April 2016 and March 2020, and zero otherwise. $\text{Share_NoPG}_{f,i,r}$ is firm f's share of a JFC outstanding loan without personal guarantees as of March 2016 (see expression (2) below). Hypothesis 1 claims that a higher share of JFC outstanding loans without personal guarantees should be associated with a higher CEO succession rate, and thus, we expect the coefficient on $\text{Share_NoPG}_{f,i,r}$, α_1, to be positive, if Hypothesis 1 is correct.

We control for variables that may affect firms' succession decisions that correlate with firms' share of loans without personal guarantees. First, we control for CEO age (as of March 2016), which is known to be one of the

[21] Japan is divided into 47 prefectures, which are similar to states of the United States and form the country's first level of jurisdiction and administrative division.

Table 2: CEO succession and firms' share of loans without personal guarantees by industry

Industry	Avg. Share No PG	% No PG = 0	% No PG = 1	% CEO change	# of firms
Accommodations	0.271	0.532	0.117	0.128	931
Agriculture, fisheries, and forestry	0.069	0.900	0.050	0.062	20
Construction	0.241	0.654	0.138	0.147	1924
Education	0.320	0.484	0.176	0.112	153
Electricity, gas, heat supply, and water	0.254	0.661	0.147	0.123	436
Finance and insurance	0.296	0.600	0.100	0.200	10
Information and communications	0.457	0.441	0.274	0.144	519
Personal services and entertainment	0.296	0.537	0.157	0.140	434
Manufacturing	0.354	0.436	0.148	0.149	10,317
Medical and health care	0.265	0.625	0.143	0.086	112
Mining	0.413	0.488	0.195	0.118	41
Real estate	0.282	0.582	0.149	0.131	1515
Scientific research	0.411	0.465	0.235	0.176	400
Services	0.360	0.505	0.213	0.157	764
Transport and postal services	0.307	0.517	0.149	0.175	1761
Wholesale and retail	0.305	0.555	0.159	0.146	5340
All	0.306	0.561	0.159	0.137	24,677

Note: This table presents the distribution of share of loans without personal guarantees and CEO change by the main industries. In the JFC data, firms are classified into four-digit JSIC codes, which we aggregate into 16 larger divisions to construct this table. *Avg. Share No PG* is the average firm's share of JFC loans without personal guarantees in each industry. *% No PG* $= 0$ is the portion of firms with their share of JFC loans without personal guarantees = 0 for each industry. *% No PG* $= 1$ is the portion of firms with their share of JFC loans without personal guarantees = 1 for each industry. *% CEO Change* is the portion of firms that experienced CEO change between April 2016 and March 2020 in each industry. All the variables except *% CEO Change* were measured on March 2016.

most important determinants of CEO succession. Second, we control for the debt-to-equity ratio.

If a company owes large amount of financial debt, a potential successor may hesitate to take it over, regardless of the personal guarantee status. The debt-to-equity ratio is calculated as total debt (including debt from financial institutions other than the JFC) over total equity as of March 2016. Finally, we control for the internal rating of the firm by the JFC because highly rated firms, which have a lower interest surcharge when borrowing without personal guarantees, may be more likely to choose loans without personal guarantees and to conduct business successions. The internal rating classifies firms into 12 categories. The Rating variable takes 1 for the firms in the highest rated category and 12 for those in the lowest rated categories. In addition, we control for industry-specific variations by including industry dummy ϕ_i, and for prefecture-specific variations by including prefecture dummy φ_r in the regression.

In an alternative specification of the model, we replace Share_NoPG with two dummy variables. *Some_NoPG* equals one if the firm has at least one JFC loan without personal guarantees, and equals zero if all the JFC loans are with personal guarantees (see expression (3)) as of March 2016. The coefficient on Some_NoPG measures how much more likely a firm with at least one JFC loan without personal guarantees is to experience a CEO succession, compared with firms with no JFC loans without personal guarantees.

All_NoPG equals one if all the JFC loans are without personal guarantees as of March 2016, and equals zero otherwise (see expression (4)). The coefficient for All_NoPG measures how much more likely a firm with all its JFC loans without personal guarantees is to experience a CEO succession compared with other firms. If Hypothesis 1 is correct, we expect coefficients on these two dummy variables to be positive.

$$\text{Share_NoPG} = \frac{(\text{Loan without PG in 2016/3})}{(\text{Total loan in 2016/3})}, \tag{2}$$

$$\text{Some_NoPG} = \begin{cases} 1 & \text{if Share_NoPG} > 0 \\ 0 & \text{if Share_NoPG} = 0 \end{cases}, \tag{3}$$

$$\text{All_NoPG} = \begin{cases} 1 & \text{if Share_NoPG} = 1 \\ 0 & \text{if Share_NoPG} < 1 \end{cases}. \tag{4}$$

5. Estimation Results

5.1 Personal guarantees and CEO succession

Table 3 presents the estimation results for the variants of the regression model 1. The dependent variable is a dummy variable that represents CEO changes. The regressions in Columns 1–3 examine the CEO changes that took place between April 2016 and March 2020 (dummy = 1 if there is at least one CEO change between 2016/4 and 2020/3). Columns 4–6 look at the CEO changes that took place within two years after the period, during which a significant portion of borrowers received loans from the JFC without personal guarantees (dummy = 1 if there is at least one CEO change between 2016/4 and 2018/3).

In all specifications, the coefficients on the share or dummies for loans without personal guarantees are positive and significant, suggesting that firms relying less on personal guarantees are more likely to experience CEO succession. The signs of coefficients on control variables are as expected. Positive coefficients on (log of) CEO age imply that firms with older CEOs are more likely to experience CEO successions. Negative coefficients on rating

suggest that firms with higher internal ratings (thus lower values of rating) are more likely to conduct succession.

The coefficient estimate on Share_NoPG in Column 1 is 0.029 (with a standard error of 0.007), indicating that firms with all of JFC loans without personal guarantees are 2.9 percentage points more likely to change CEOs in the following four years, compared with firms with no JFC loans without personal guarantees. Given that the total succession rate in those four years is 13.7% in our sample, the difference in the share of loans without personal guarantees can explain more than 20% of the variation in CEO succession at the extreme. A higher share of loans without personal guarantees is associated with a higher succession rate, which is consistent with Hypothesis 1.

Columns 2 and 3 use Some_NoPG and All_NoPG, respectively, in place of Share_NoPG. The estimated coefficients on those dummies are 0.021 and 0.024, respectively, with standard errors of 0.004 and 0.008. The positive coefficient of Some_NoPG indicates that whether a firm has some loans without personal guarantees or not is positively correlated with the firm's succession decision. The positive coefficient of All_NoPG indicates that if all of a firm's JFC loans are without personal guarantees, the firm is more likely to experience CEO succession.

5.2 Owner-managed firms

Several factors can potentially affect the relationship between personal guarantees and CEO succession. As owner-managed firms have more practical hurdles in replacing CEOs than non-owner-managed firms, reducing reliance on personal guarantees may have a smaller effect on owner-managed firms' succession. Owner-managed firms account for a large share of SMEs in Japan. In our sample, for example, 35% of the firms have CEOs with more than 50% of the company's shareholdings.

Table 3: Personal guarantees and CEO succession

	Dependent variable: CEO Change					
	Whole sample (2016/4–2020/3)			First two years (2016/4-2018/3)		
Dependent variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Share No PG	0.0297			0.0113		
	(0.00753)			(0.00363)		
Some No PG		0.0204			0.0102	
		(0.00497)			(0.00279)	
All No PG			0.0248			0.00596
			(0.00879)			(0.00380)
ln(CEO Age)	0.480	0.479	0.480	0.232	0.231	0.232
	(0.0154)	(0.0154)	(0.0155)	(0.00974)	(0.00973)	(0.00976)
Debt-equity Ratio	-0.00982	-0.0231	-0.0133	0.0185	0.0145	0.0144
	(0.0296)	(0.0272)	(0.0310)	(0.0232)	(0.0228)	(0.0233)
Rating	-0.00484	-0.00473	-0.00558	-0.00277	-0.00262	-0.00307
	(0.00135)	(0.00140)	(0.00136)	(0.00131)	(0.00131)	(0.00131)
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes
JSIC 4-digit FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,270	20,270	20,270	20,270	20,270	20,270
R^2	0.125	0.125	0.125	0.082	0.083	0.082

Standard errors in parentheses.

Notes: This table presents the results of OLS regressions examining how firms' share of loans without personal guarantees are related to CEO succession. We exclude firms that took out the loans for business succession programs from our sample. Independent variables are dummies for CEO change during whole sample (2016/4–2020/3) and the first two years of our sample (2016/4–2020/3). Dependent variables were measured in March 2016. Share_NoPG is each firm's share of JFC loans without personal guarantees. Some_NoPG is a dummy for firms with a positive share of JFC loans without personal guarantees. All_NoPG is a dummy for firms with a 100% share of JFC loans without personal guarantees. *Debt-equity-Ratio* is calculated as total debt over total equity. *Surcharge* is the (potential) interest surcharge if all the firms had borrowed without personal guarantees. Standard errors (in brackets) are robust to arbitrary heteroscedasticity and clustered across JSIC industries and prefectures. The level of analysis is at the firm level.

Table 4 presents the results of the estimation. Consistent with the baseline regressions, we find that the share of firms' loans without personal guarantees positively correlates with firms' CEO succession.

We also find that the effect of reducing reliance on personal guarantees for business succession is less pronounced for owner-managed firms. Columns 1–3 report the estimation results for the sample of firms with more than 50% of CEO's shareholdings only, and Columns 4–6 report the results for the sample of of firms with less than 50% of CEO's shareholdings. The coefficients of Share_NoPG, Some_NoPG, and All_NoPG are all smaller for firms with more than 50% CEO shareholdings. For example, the coefficient estimate of the share of loans without personal guarantees of the sample of firms with more than 50% CEO shareholdings is 0.018 (with a standard error of 0.009), while the estimate with the sample of firms with less than 50% CEO shareholdings firms is 0.032 (with a standard error of 0.010).

Columns 7–9 further confirm the point by adding the interaction terms of the NoPG variable and CEO shareholdings. The coefficients of the interaction terms are all negative and significant, which indicates that the effect of reducing personal guarantees on CEO succession is smaller for firms with higher CEO shareholdings. Thus, the results in Table 4 are consistent with Hypothesis 2.

5.3 Industries in which family successions are common

Next, we analyze how the prevalence of family succession in the same industry influences the impact of receiving loans without personal guarantees on succession. As we argued in Section 2, whether the effect of personal guarantees is larger or smaller on family succession is ambiguous. On the one hand, a departing CEO will care more about the well-being of the successor CEO, who is a family member. Then, the potential financial burden im-

Table 4: Personal guarantees and CEO shareholding

	Dependent variable: CEO Change (2016/4–2020/3)								
	CEO shareholding $\geq$ 50%			CEO shareholding $<$ 50%			Whole sample		
Independent variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
CEO Shareholding							-0.0775	-0.0779	-0.0864
							(0.0112)	(0.0119)	(0.0102)
Share No PG	0.0177			0.0337			0.0409		
	(0.00981)			(0.0103)			(0.0107)		
$\times$ CEO shareholding							-0.0349		
							(0.0173)		
Some No PG		0.0140			0.0225			0.0264	
		(0.00775)			(0.00705)			(0.00776)	
$\times$ CEO shareholding								-0.0214	
								(0.0132)	
All No PG			0.0170			0.0267			0.0296
			(0.0137)			(0.0105)			(0.0126)
$\times$ CEO shareholding									-0.0162
									(0.0242)
ln(CEO Age)	0.393	0.393	0.394	0.527	0.527	0.527	0.484	0.483	0.484
	(0.0252)	(0.0253)	(0.0252)	(0.0212)	(0.0212)	(0.0215)	(0.0157)	(0.0157)	(0.0158)
Debt-equity Ratio	0.0501	0.0450	0.0496	0.00429	-0.0128	-0.000625	0.0313	0.0169	0.0275
	(0.0468)	(0.0460)	(0.0471)	(0.0311)	(0.0279)	(0.0326)	(0.0282)	(0.0260)	(0.0296)
Rating	-0.00733	-0.00718	-0.00770	-0.00363	-0.00357	-0.00455	-0.00442	-0.00435	-0.00512
	(0.00207)	(0.00209)	(0.00206)	(0.00155)	(0.00159)	(0.00151)	(0.00132)	(0.00136)	(0.00133)
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
JSIC 4-digit FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7103	7103	7103	12,971	12,971	12,971	20,270	20,270	20,270
R^2	0.161	0.161	0.161	0.148	0.148	0.148	0.131	0.131	0.131

Standard errors in parentheses.

Notes: This table presents the result of OLS regressions examining how the relationship between firms' share of loans without personal guarantees and CEO succession differs across different ownership structures. We exclude firms that took out the loans for business succession programs from our sample. The dependent variable is the dummy for CEO change between 2016/4 and 2020/3. Columns 1–3 include the sample of firms with its CEOs holding more than 50% of shareholding, and Columns 4–6 include the sample of of firms with its CEOs holding less than 50% of shareholding. *CEO Shareholding* is the share of CEO shareholding in the company. All the independent variables were measured in March 2016. Standard errors (in brackets) are robust to arbitrary heteroscedasticity and clustered across JSIC industries and prefectures. The level of analysis is at the firm level.

plied by personal guarantees can further inhibit family succession. On the other hand, family succession planning may start much earlier than that for non-family succession. This may make family succession less dependent on short-term financial changes, such as the enhanced opportunity to receive loans without personal guarantees.

Table 5 presents the estimation results. Columns 1–3 are the results for firms in industries with above-average family succession rates. Columns 4–6 are the results for firms in industries with below-average family succession rates. The coefficient estimates of Share_NoPG, Some_NoPG, and All_NoPG are all smaller for firms in industries with above-average family succession rates. For example, the coefficient estimate of the share of loans without personal guarantees with the sample of firms in industries with high family succession rates is 0.026 (with a standard error of 0.009), while the coefficient estimate for the firms in industries with low family succession rates is 0.035 (with a standard error of 0.009).

Columns 7–9 add the interaction terms between the NoPG variables and industry-level family succession rates. The coefficient estimates of the interaction terms are all negative and significant, suggesting that the effect of reduced reliance on personal guarantees on CEO succession is smaller for firms in industries with higher family succession rates. Thus, the results align with Hypothesis 3b.

6. Survey Evidence

6.1 Survey background

The results in Section 5 suggest that obtaining bank loans without personal guarantees is associated with a higher CEO succession rate. The analysis, however, cannot identify the direction of causality. Do loans without per-

Table 5: Personal guarantees and industries with various family succession rates

	Dependent variable: CEO Change (2016/4–2020/3)								
	Industries > average family succession rates			Industries ≤ average family succession rates			Whole sample		
Independent variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Share Family Succession							-0.00966	-0.0151	-0.0176
							(0.0223)	(0.0264)	(0.0193)
Share No PG	0.0276			0.0343			0.0743		
	(0.00899)			(0.0101)			(0.0252)		
× Share Family Succession							-0.0595		
							(0.0361)		
Some No PG		0.0216			0.0185			0.0484	
		(0.00588)			(0.00786)			(0.0271)	
× Share Family Succession								-0.0374	
								(0.0394)	
All No PG			0.0190			0.0361			0.0832
			(0.00894)			(0.0147)			(0.0290)
× Share Family Succession									-0.0813
									(0.0399)
ln(CEO Age)	0.480	0.480	0.480	0.479	0.479	0.480	0.479	0.478	0.480
	(0.0203)	(0.0202)	(0.0202)	(0.0186)	(0.0188)	(0.0188)	(0.0143)	(0.0144)	(0.0144)
Debt-equity Ratio	-0.0371	-0.0477	-0.0433	0.0367	0.0177	0.0386	-0.0256	-0.0408	-0.0298
	(0.0379)	(0.0365)	(0.0394)	(0.0667)	(0.0669)	(0.0674)	(0.0267)	(0.0241)	(0.0272)
Rating	-0.00359	-0.00338	-0.00433	-0.00711	-0.00716	-0.00788	-0.00413	-0.00392	-0.00503
	(0.00177)	(0.00186)	(0.00170)	(0.00313)	(0.00307)	(0.00312)	(0.00117)	(0.00122)	(0.00115)
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
JSIC 4-digit FE	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Observations	13,332	13,332	13,332	6938	6938	6938	20,385	20,385	20,385
R^2	0.122	0.122	0.122	0.140	0.140	0.140	0.083	0.083	0.082

Standard errors in parentheses

Notes: This table presents the result of OLS regressions examining how the relationship between firms' share of loans without personal guarantees and CEO succession differs across industries with various family succession rates. We exclude firms that took out the loans for business succession programs from our sample. The dependent variable is the dummy for CEO change between 2016/4 and 2020/3. Columns 1–3 include the sample of firms in industries where family succession rates are above average (69.5%), and Columns 4–6 include the sample of firms in industries where family succession rates were below average (69.5%). *Share Family Succession* is the industry-level family succession rates. All the independent variables were measured in March 2016. In Columns 7–9 (1–6), standard errors are robust to arbitrary heteroscedasticity and clustered across JSIC industries and prefectures (across prefectures). The level of analysis is at the firm level.

sonal guarantees encourage business owners to leave their companies to their successors? Or are SMEs that are about to conduct business succession more likely to borrow without personal guarantees?

To answer these questions, we conducted a survey of Japanese SMEs in September 2022 in cooperation with TSR. The survey targeted the firms that conducted CEO succession during the period of April 2016 to March 2021. We gathered responses from a total of 601 firms, approximately 3% of all the firms that subscribed to the TSR publication and experienced CEO succession during the sample period.

The survey asked firms that had experienced succession whether they had taken out bank loans without personal guarantees from April 2014 to March 2016, and if so, if they had done so primarily to ease their CEO succession. We asked firms that borrowed without personal guarantees for primary reasons other than CEO succession if borrowing without personal guarantees nonetheless resulted in facilitating their succession.

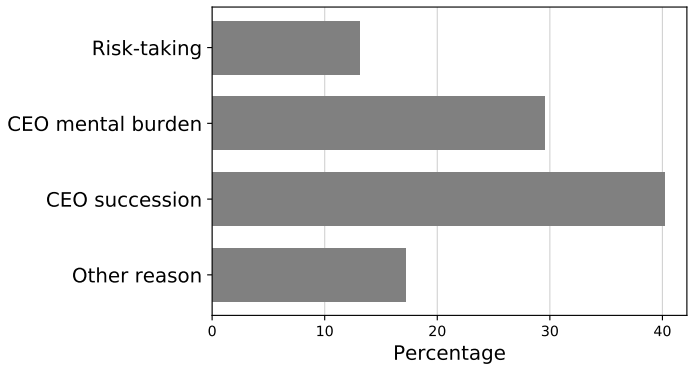
6.2 Survey results

First, we found 28.5% of the surveyed firms had received bank loans without personal guarantees between February 2014 and March 2016. Of those, 23.3% had borrowed from the JFC, 12.0% from other government financial institutions, and 81.2% from private-sector banks (multiple responses allowed).

Second, we asked firms that had borrowed without personal guarantees before CEO succession about the primary reason for doing so. Figure 3 summarizes the results. Approximately 40% of the firms answered that the primary reason was to ease CEO succession. For these firms, the causality seems to run from CEO succession to loan without personal guarantees, rather than the other way around. Approximately 13% of the firms answered

that they had borrowed without personal guarantees to finance more risky projects than before, and 29% answered that they had aimed to reduce psychological burden for their CEOs. Some firms responded that their relationship lenders did not require personal guarantees. Some other firms just detailed the use of the loans, such as financing working capital and equipment purchase. These responses have been classified as "other reasons."

Figure 3: Primary reasons for borrowing without personal guarantees



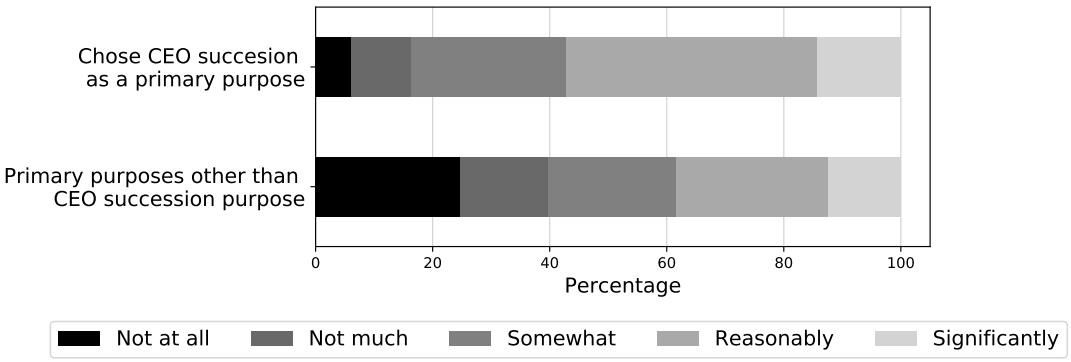
Note: This graph summarizes the answers of 133 SMEs that took out bank loans without personal guarantees between 2014/2 and 2016/3 and conducted CEO succession between 2016/4 and 2020/3. The survey question was "What was the reason for borrowing without personal guarantees? Please choose the closest reason." Multiple answers were not allowed for this question.

Finally, we asked the firms that had borrowed without personal guarantees before CEO succession whether doing so facilitated the succession. Figure 3 shows the results separately for the firms that had borrowed without personal guarantees mainly to ease CEO succession and those that had other primary purposes (risk-taking, reduction of psychological burden, and others). More than 80% of the firms that had borrowed without personal guarantees primarily for business succession stated that the lack of personal guarantees had indeed facilitated succession. Even for firms that borrowed without guarantees primarily for purposes other than succession, 80% of them said that borrowing without personal guarantees facilitated succes-

sion. The latter reinforces the argument that there exists a causal effect of borrowing without personal guarantees on CEO succession.

In summary, the survey results suggest that the causality runs both ways. Some firms took out loans without personal guarantees to facilitate business successions that they had already planned. Some other firms borrowed without personal guarantees for purposes other than business succession but found their CEO succession was made easier *ex-post*.

Figure 4: Did borrowing without personal guarantees facilitate CEO succession?



Note: This graph summarizes the answers of 133 SMEs that took out bank loans without personal guarantees between 2014/2 and 2016/3 and conducted CEO succession between 2016/4 and 2020/3. The survey question was "How much did borrowing without personal guarantees facilitate the subsequent business succession?" Multiple answers were not allowed for this question. The first bar shows the distribution of answers by SMEs that had borrowed without personal guarantees primarily for succession. The second bar shows the distribution of answers for those that had a primary reason other than business succession (risk-taking, CEO's mental health, or others).

7. Conclusion

In a rapidly aging society such as Japan's, securing smooth succession in viable businesses is important for maintaining economic growth. The practice by Japanese banks to require SME managers to pledge personal guarantees for business loans has been blamed as a serious impediment to CEO succes-

sion. Removing the impediment was one of the aims of the 2014 Guidelines for Personal Guarantee Provided by Business Owners, which asked lenders not to rely on personal guarantees as long as borrowers clearly distinguished the business assets from their personal ones.

Using SME loan data from a government financial institution in Japan, this paper examined the relationship between personal guarantee agreements on bank loans by SME managers and their CEO succession. We found that receiving loans without personal guarantees increases SMEs' CEO succession. We also found that the impact of personal guarantees on CEO succession is moderated for owner-managed firms and firms in industries in which family succession is more common. The results suggest that owner-managers and those who plan to let their family members succeed them are less encumbered by the presence of personal guarantees, maybe because they are more determined.

We also conducted a corporate survey that asked for the primary reasons for borrowing without personal guarantees and if that facilitated CEO succession. The survey results suggest that the causality between borrowing without personal guarantees and CEO succession runs both ways. Some firms took out loans without personal guarantees to facilitate CEO succession, and others found that their business succession was made easier by receiving loans without personal guarantees.

Overall, our findings confirm that the common practice of requiring SME owners to pledge personal guarantees tends to inhibit smooth CEO succession, which was one of the crucial rationales for establishing the Japanese Guidelines. But it was not the only one. Another rationale was that personal guarantees discourage entrepreneurial risk-taking and prevent the development of a dynamic economy. We will leave the analysis of the relationship between corporate risk-taking and personal guarantees and other potential impacts of requiring personal guarantees by SME owners on their corporate

strategies for future research.

References

Adner, Ron and Constance E Helfat, "Corporate effects and dynamic managerial capabilities," *Strategic management journal*, 2003, *24* (10), 1011–1025.

Amore, Mario Daniele, Alessandro Minichilli, and Guido Corbetta, "How do managerial successions shape corporate financial policies in family firms?," *Journal of Corporate Finance*, 2011, *17* (4), 1016–1027.

Bates, Thomas W, Kathleen M Kahle, and René M Stulz, "Why do US firms hold so much more cash than they used to?," *The journal of finance*, 2009, *64* (5), 1985–2021.

Belenzon, Sharon, Anastasiya Shamshur, and Rebecca Zarutskie, "CEO's age and the performance of closely held firms," *Strategic Management Journal*, 2019, *40* (6), 917–944.

Bena, Jan and Ting Xu, "Competition and ownership structure of closely held firms," *The Review of Financial Studies*, 2017, *30* (5), 1583–1626.

Benmelech, Efraim, Nitish Kumar, and Raghuram Rajan, "The decline of secured debt," Technical Report, National Bureau of Economic Research 2020.

Bennedsen, Morten, Joseph PH Fan, Ming Jian, and Yin-Hua Yeh, "The family business map: Framework, selective survey, and evidence from Chinese family firm succession," *Journal of Corporate Finance*, 2015, *33*, 212–226.

_ , Kasper Meisner Nielsen, Francisco Pérez-González, and Daniel Wolfenzon, "Inside the family firm: The role of families in succession decisions and performance," *The Quarterly Journal of Economics*, 2007, *122* (2), 647–691.

Berns, Kristin VD and Patricia Klarner, "A review of the CEO succession literature and a future research program," *Academy of Management Perspectives*, 2017, *31* (2), 83–108.

Bester, Helmut, "The role of collateral in a model of debt renegotiation," *Journal of money, credit and banking*, 1994, *26* (1), 72–86.

Brush, Thomas H, Philip Bromiley, and Margaretha Hendrickx, "The free cash flow hypothesis for sales growth and firm performance," *Strategic management journal*, 2000, *21* (4), 455–472.

Burkart, Mike, Fausto Panunzi, and Andrei Shleifer, "Family firms," *The journal of finance*, 2003, *58* (5), 2167–2201.

Cannella, Sydney Finkelstein Bert, Donald C Hambrick, Sydney Finkelstein, and Albert A Cannella, *Strategic leadership: Theory and research on executives, top management teams, and boards*, Strategic Management, 2009.

Cespedes, Frank V and Robert M Galford, "Succession and failure.," *Harvard business review*, 2004, *82* (6), 31–5.

Chaganti, Rajeswararao and Fariborz Damanpour, "Institutional ownership, capital structure, and firm performance," *Strategic management journal*, 1991, *12* (7), 479–491.

Chava, Sudheer, Vikram Nanda, and Steven Chong Xiao, "Lending to innovative firms," *The Review of Corporate Finance Studies*, 2017, *6* (2), 234–289.

Claessens, Stijn, Simeon Djankov, and Larry HP Lang, "The separation of ownership and control in East Asian corporations," *Journal of financial Economics*, 2000, *58* (1-2), 81–112.

Cucculelli, Marco and Giacinto Micucci, "Family succession and firm performance: Evidence from Italian family firms," *Journal of Corporate Finance*, 2008, *14* (1), 17–31.

Denis, David J and Diane K Denis, "Majority owner-managers and organizational efficiency," *Journal of corporate finance*, 1994, *1* (1), 91–118.

Dittmar, Amy and Ran Duchin, "Looking in the rearview mirror: The effect of managers' professional experience on corporate financial policy," *The Review of Financial Studies*, 2016, *29* (3), 565–602.

Dobrev, Stanislav D and William P Barnett, "Organizational roles and transition to entrepreneurship," *Academy of Management Journal*, 2005, *48* (3), 433–449.

Durand, Rodolphe and Vicente Vargas, "Ownership, organization, and private firms' efficient use of resources," *Strategic Management Journal*, 2003, *24* (7), 667–675.

Eckbo, B Espen and Karin S Thorburn, "Control benefits and CEO discipline in automatic bankruptcy auctions," *Journal of Financial Economics*, 2003, *69* (1), 227–258.

__ , __ , and Wei Wang, "How costly is corporate bankruptcy for the CEO?," *Journal of Financial Economics*, 2016, *121* (1), 210–229.

Eisdorfer, Assaf, "Empirical evidence of risk shifting in financially distressed firms," *The Journal of Finance*, 2008, *63* (2), 609–637.

Ellul, Andrew, Marco Pagano, and Fausto Panunzi, "Inheritance law and investment in family firms," *American Economic Review*, 2010, *100* (5), 2414–50.

Fattoum-Guedri, Asma, Frédéric Delmar, and Mike Wright, "The best of both worlds: Can founder-CEOs overcome the rich versus king dilemma after IPO?," *Strategic Management Journal*, 2018, *39* (13), 3382–3407.

Fitza, Markus and Laszlo Tihanyi, "How much does ownership form matter?," *Strategic Management Journal*, 2017, *38* (13), 2726–2743.

Hambrick, Donald C, "Upper echelons theory: An update," 2007.

__ and Phyllis A Mason, "Upper echelons: The organization as a reflection of its top managers," *Academy of management review*, 1984, *9* (2), 193–206.

Hessels, Jolanda, Cornelius A Rietveld, A Roy Thurik, and Peter Van der Zwan, "Depression and entrepreneurial exit," *Academy of Management Perspectives*, 2018, *32* (3), 323–339.

Hochberg, Yael V, Carlos J Serrano, and Rosemarie H Ziedonis, "Patent collateral, investor commitment, and the market for venture lending," *Journal of Financial Economics*, 2018, *130* (1), 74–94.

Huson, Mark R, Paul H Malatesta, and Robert Parrino, "Managerial succession and firm performance," *Journal of Financial Economics*, 2004, *74* (2), 237–275.

Japan Industry Review, "Japan Ramps up Business Succession Support Amid Aging Owners," 2017. Accessed on March 3rd, 2022 from https://www.japanindustrynews.com/2017/07/japan-ramps-business-succession-support-amid-aging-owners/.

Kamei, Katsuyuki, Yuki Ohisa, and Shinya Kaneko, "Chusho-kigyo Keieisha no mental health and risk management," *Risk and Management*, 2011, *42*, 7–23.

Karaevli, Ayse and Edward J Zajac, "When do outsider CEOs generate strategic change? The enabling role of corporate stability," *Journal of Management Studies*, 2013, *50* (7), 1267–1294.

Kato, Takao and Cheryl Long, "Executive turnover and firm performance in China," *American Economic Review*, 2006, *96* (2), 363–367.

Kodama, Naomi, Yoshiaki Murakami, and Mari Tanaka, "No Successor, No Success? Impact of a Little Son on Business Performance," *Journal of the Japanese and International Economies*, 2021, *62*, 101169.

Kokubo, Kinya and Takanori Aya, "Empirical study for CEO's carrer path in Japanese companies," 2019.

Lee, Joon Mahn, Dalee Yoon, and Steven Boivie, "Founder CEO succession: The role of CEO organizational identification," *Academy of Management Journal*, 2020, *63* (1), 224–245.

Lee, Khai Sheang, Guan Hua Lim, and Wei Shi Lim, "Family business succession: Appropriation risk and choice of successor," *Academy of management Review*, 2003, *28* (4), 657–666.

Ma, Song, Joy Tianjiao Tong, and Wei Wang, "Bankrupt innovative firms," *Management Science*, 2022, *68* (9), 6971–6992.

Mann, William, "Creditor rights and innovation: Evidence from patent collateral," *Journal of Financial Economics*, 2018, *130* (1), 25–47.

Mehrotra, Vikas, Randall Morck, Jungwook Shim, and Yupana Wiwattanakantang, "Adoptive expectations: Rising sons in Japanese family firms," *Journal of Financial Economics*, 2013, *108* (3), 840–854.

Nelson, Teresa, "The persistence of founder influence: Management, ownership, and performance effects at initial public offering," *Strategic management journal*, 2003, *24* (8), 707–724.

Nini, Greg, David C Smith, and Amir Sufi, "Creditor control rights and firm investment policy," *Journal of Financial Economics*, 2009, *92* (3), 400–420.

_ , _ , and _ , "Creditor control rights, corporate governance, and firm value," *The Review of Financial Studies*, 2012, *25* (6), 1713–1761.

Organization for Small and Medium Enterprises and Regional Innovation, "Business Succession Survey Report," 2011. Accessed on March 3rd, 2022 https://www.smrj.go.jp/doc.

Osborn, Richard N, Lawrence R Jauch, Thomas N Martin, and William F Glueck, "The event of CEO succession, performance, and environmental conditions," *Academy of Management Journal*, 1981, *24* (1), 183–191.

Parsons, Chris and Sheridan Titman, "Capital structure and corporate strategy," in "Handbook of empirical corporate finance," Elsevier, 2008, pp. 203–234.

Pérez-González, Francisco, "Inherited control and firm performance," *American Economic Review*, 2006, *96* (5), 1559–1588.

Porta, Rafael La, Florencio Lopez de Silanes, and Andrei Shleifer, "Corporate ownership around the world," *The journal of finance*, 1999, *54* (2), 471–517.

Powell, E Erin and Ted Baker, "It's what you make of it: Founder identity and enacting strategic responses to adversity," *Academy of Management Journal*, 2014, *57* (5), 1406–1433.

Quigley, Timothy J and Donald C Hambrick, "When the former CEO stays on as board chair: Effects on successor discretion, strategic change, and performance," *Strategic Management Journal*, 2012, *33* (7), 834–859.

Roberts, Michael R and Amir Sufi, "Financial contracting: A survey of empirical research and future directions," *Annu. Rev. Financ. Econ.*, 2009, *1* (1), 207–226.

Rouzet, Dorothée, Aida Caldera Sánchez, Theodore Renault, and Oliver Roehn, "Fiscal challenges and inclusive growth in ageing societies," 2019, (27).

Serfling, Matthew A, "CEO age and the riskiness of corporate policies," *Journal of Corporate Finance*, 2014, *25*, 251–273.

Strebulaev, Ilya A and Baozhong Yang, "The mystery of zero-leverage firms," *Journal of Financial Economics*, 2013, *109* (1), 1–23.

Thakor, Anjan V and Gregory F Udell, "Secured lending and default risk: equilibrium analysis, policy implications and empirical results," *The Economic Journal*, 1991, *101* (406), 458–472.

Tohoku Federation of Bar Associates, "Resolution calling for the principle abolition of personal guarantees," 2012. Accessed on March 3rd, 2022 fromhttps://www.t-benren.org/statement/27.

Tsoutsoura, Margarita, "The effect of succession taxes on family firm investment: Evidence from a natural experiment," *The Journal of Finance*, 2015, *70* (2), 649–688.

Wasserman, Noam, "Founder-CEO succession and the paradox of entrepreneurial success," *Organization science*, 2003, *14* (2), 149–172.

_ , "Stewards, agents, and the founder discount: Executive compensation in new ventures," *Academy of Management Journal*, 2006, *49* (5), 960–976.

Werner, Steve, Henry L Tosi, and Luis Gomez-Mejia, "Organizational governance and employee pay: How ownership structure affects the firm's compensation strategy," *Strategic Management Journal*, 2005, *26* (4), 377–384.